

Characterization of the Quality of Source and Finished Water of Community Water Systems (CWSs)

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Focus of Today's Talk

- **Source Water-Quality Assessments (SWQAs)**
- **Compound selection process**
- **Occurrence, comparison to human-health benchmarks, and comparison of source and finished water**

Source Water-Quality Assessments



Why SWQAs?

- **Increase the number of large public supply wells monitored**
- **Increase sampling at/near CWS intakes**
- **Need to relate ambient NAWQA findings to source water used by CWSs**
- **Include compounds not previously monitored by NAWQA (or CWSs)**

SWQA Design

Ground Water

- **30 Studies**
- **15 CWS wells per study**
- **Sampled once**

Surface Water

- **30 Studies**
- **1 intake per study**
- **Sampled monthly plus 5 other times**

SWQA Design (cont.)

Sampling

Phase 1

- 1st year
- Source water
- 260 Compounds

Phase 2

- 2nd year
- Frequently occurring compounds
- Source and finished water

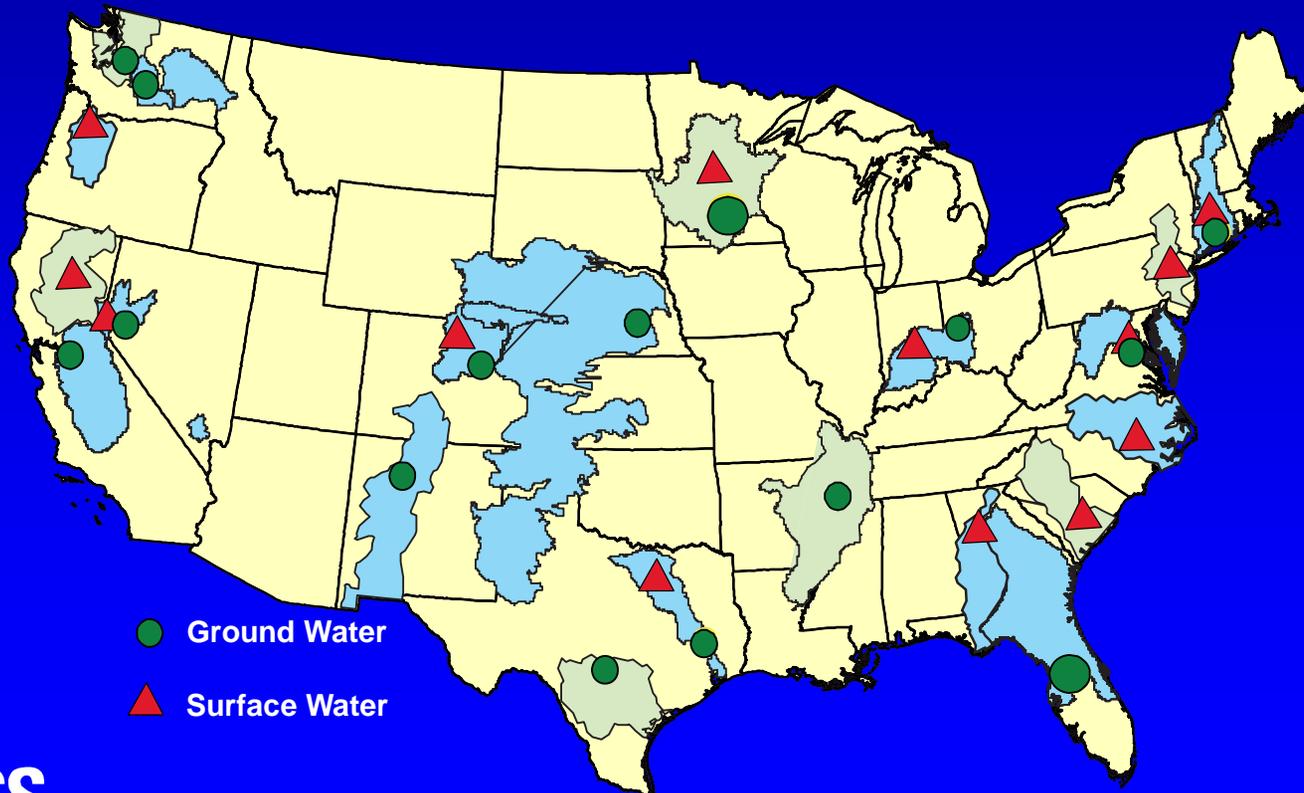
SWQAs About 1/2 Complete

Ground Water

- 12 completed; 3 in progress
- Reports began in 2006

Surface Water

- 9 completed; 4 in progress
- Reports begin in 2007



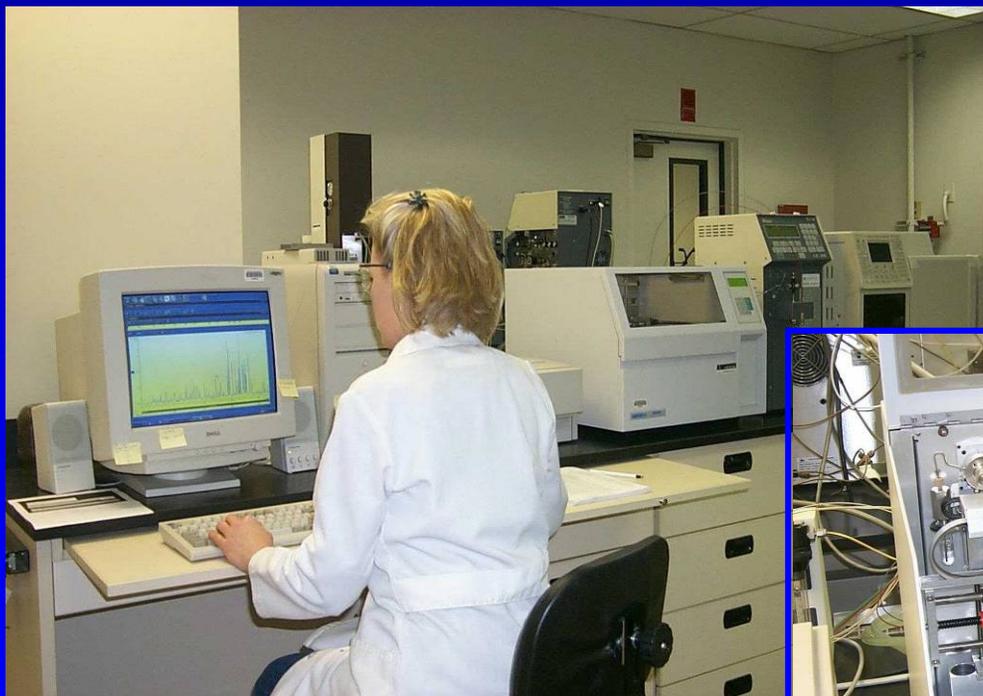
Compound Selection

**Focus on Compounds
With Known/Potential:**

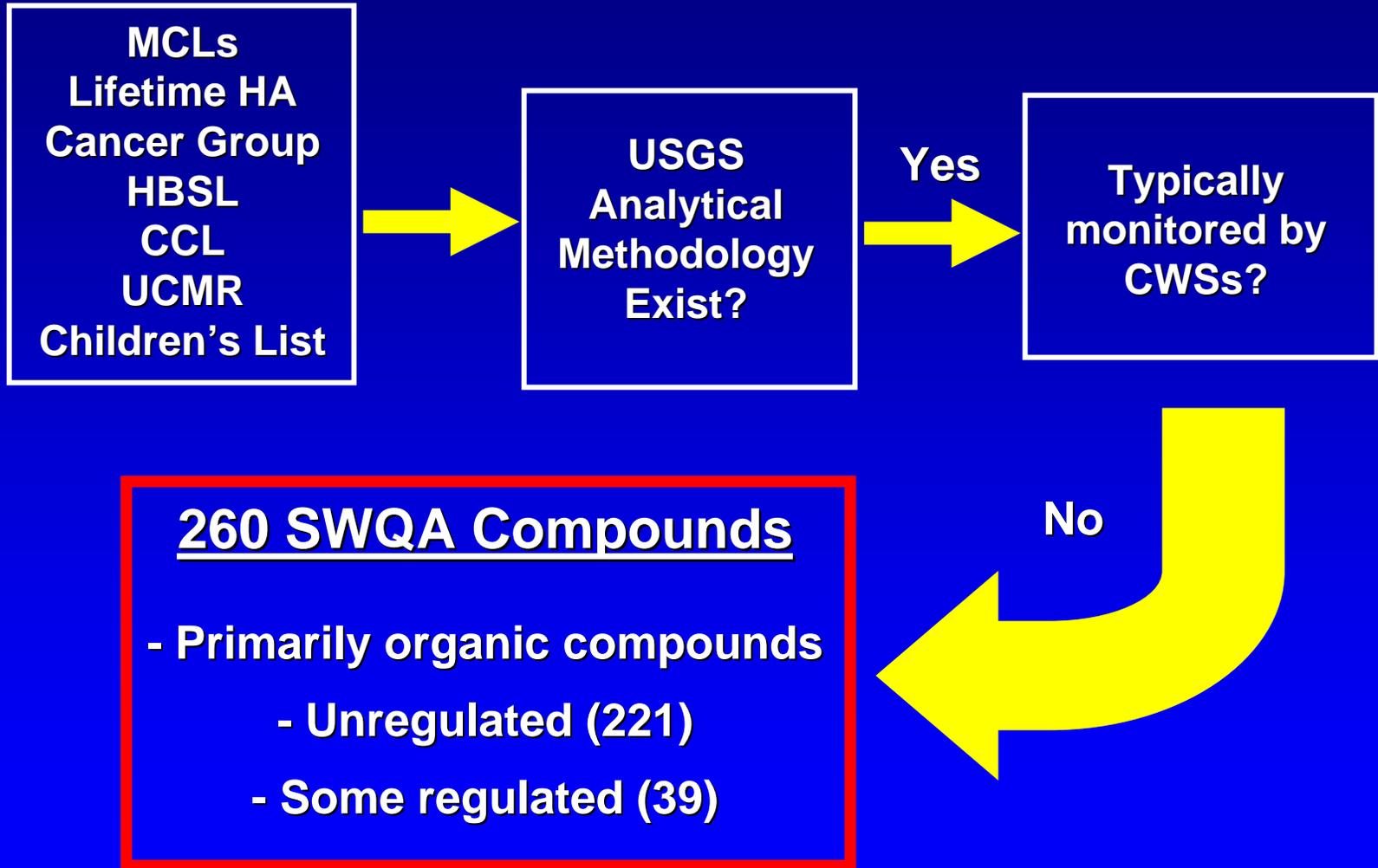
**(1) Human-Health
Effects**

**(2) Occur in public
water systems**

**(3) Not monitored
by CWSs**



Compound Selection Process



Occurrence and Comparisons



Sample Type	Number of Samples	
	Surface Water	Ground Water
Source Water	145	214
Source and Finished Water	90	86

More Compounds Occur More Frequently in Surface Water than Ground Water

Ground Water

125 Detected

15 most frequently occurring } (8 – 37%)

- Solvents
- Disinfection by-products

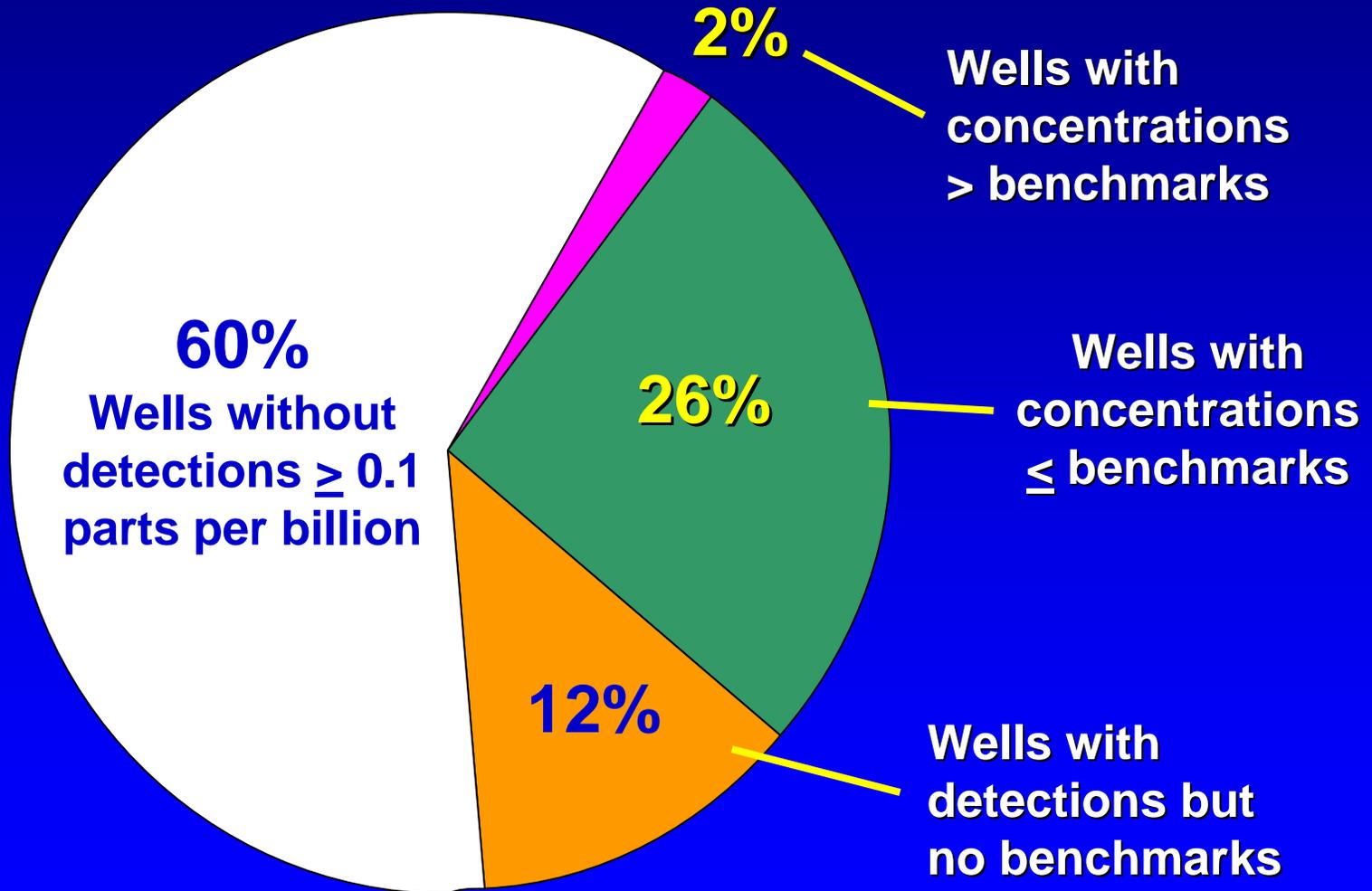
Surface Water

143 Detected

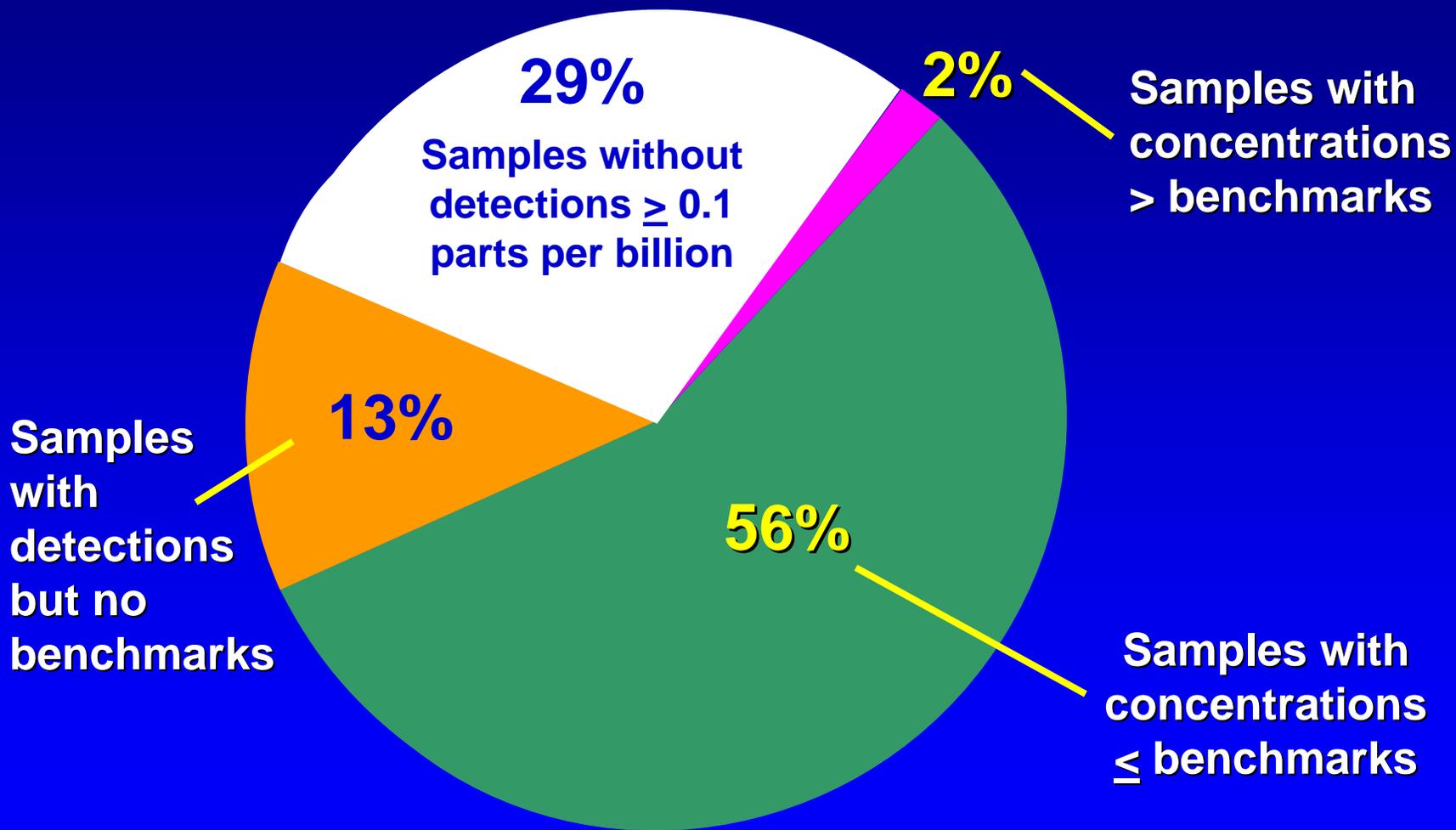
15 most frequently occurring } (41 – 69%)

- Herbicides and degradates
- Personal care/domestic use compounds

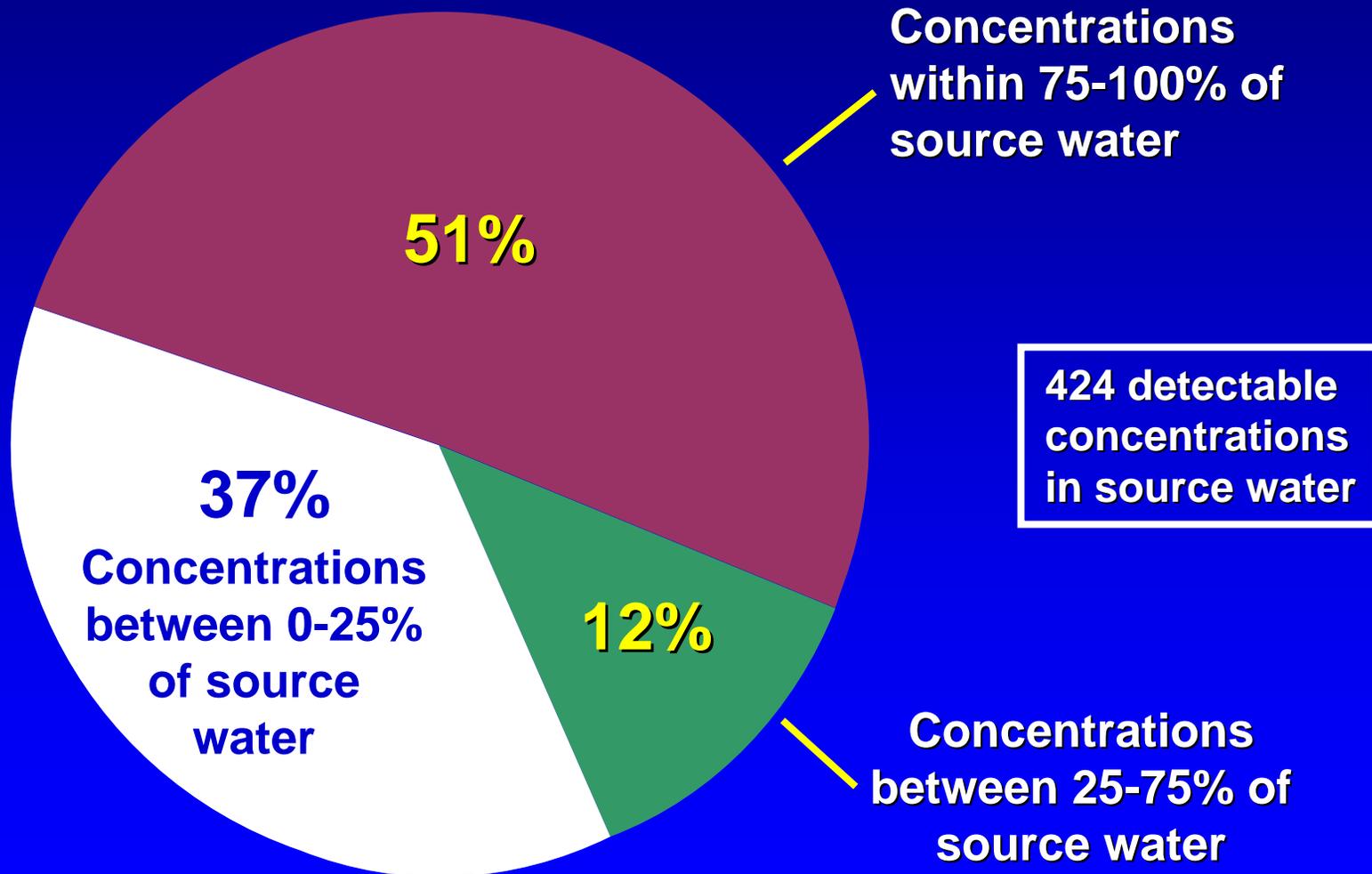
Most CWS Wells Did Not Have Concentrations Greater than Benchmarks



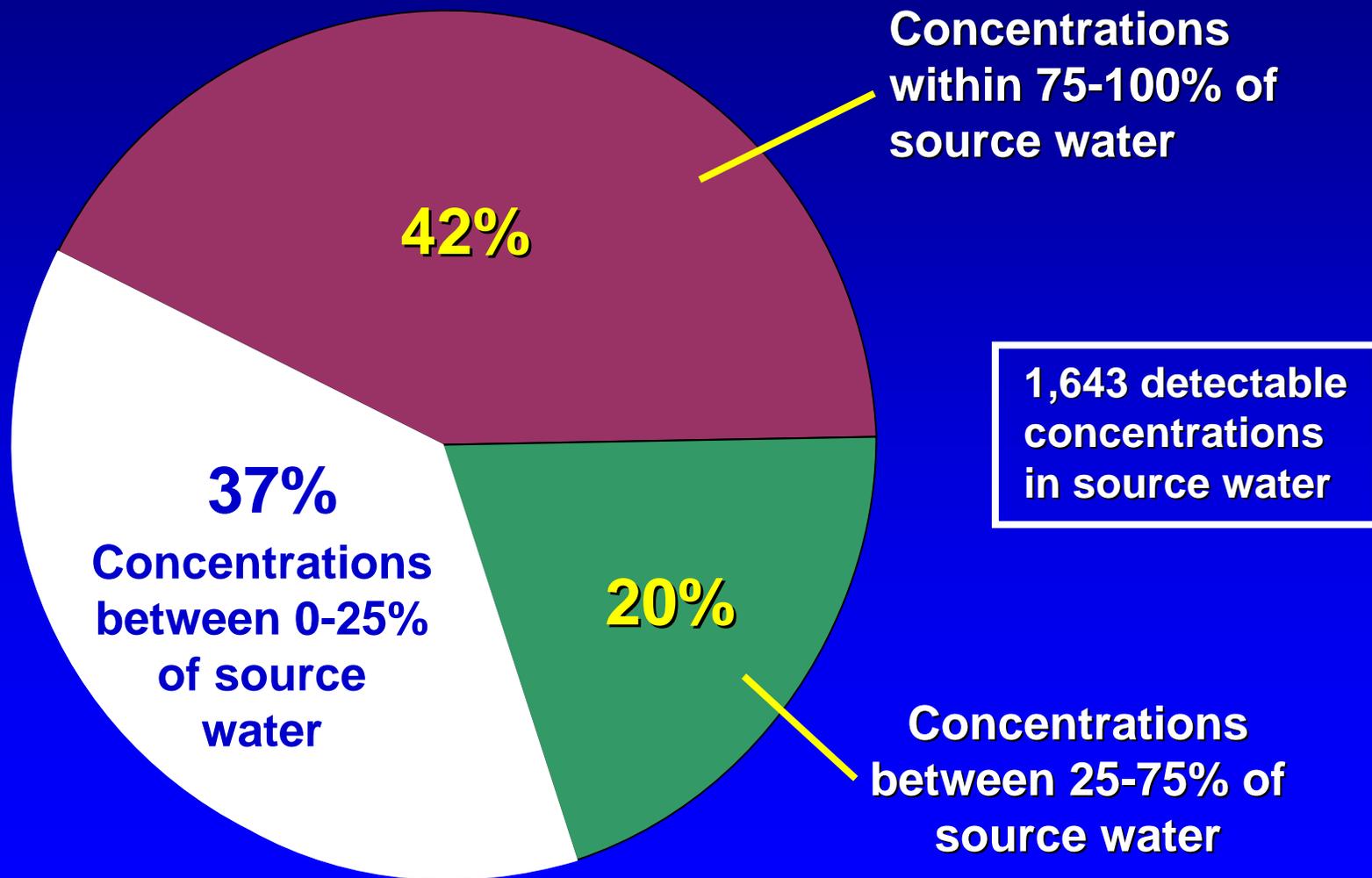
Most CWS Intake Samples Did Not Have Concentrations Greater than Benchmarks



Half of Finished-Water Samples Had Concentrations Similar to CWS Wells



Most Finished-Water Samples Had Concentrations Similar to CWS Intakes



Conclusions

- **More compounds detected more frequently in SW than GW**
- **Concentrations typically below human-health benchmarks**
- **Half of concentrations in wells detected in finished water at similar concentrations**
- **Most concentrations at intakes detected in finished water at similar concentrations**

Additional Information

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